

Question 4.

a) $V_{\min} = \sqrt{\frac{W}{S} \times \frac{2}{P} \times \frac{1}{C_L}}$

$$V_{\min}^2 = \frac{W}{S} \times \frac{2}{P} \times \frac{1}{C_L} \Rightarrow \frac{V_{\min}^2 \times C_L}{1} = \frac{W}{S} \times \frac{2}{P}$$

$$\Rightarrow \frac{V_{\min}^2 \times C_L \times P}{2} = \frac{W}{S}$$

$$\frac{1}{S} = \frac{V_{\min}^2 \times C_L \times P}{2W}$$

b) i) $\frac{8x-3}{5} = \frac{-5x+6}{-3} \Rightarrow -3(8x-3) = 5(-5x+6)$

$$-24x + 9 = -25x + 30$$

$$12x = 21$$

$$\underline{x = 21}$$

ii) $\frac{(4x-1)}{3} - \frac{x}{4} = \frac{4x+3}{2}$ $\times 12$

$$\frac{12(4x-1)}{3} - \frac{12x}{4} = \frac{12(4x+3)}{2}$$

$$4(4x-1) - 3x = 6(4x+3)$$

$$16x - 4 - 3x = 24x + 18$$

$$13x - 4 = 24x + 18$$

$$-11x = 22$$

$$\underline{x = -2}$$